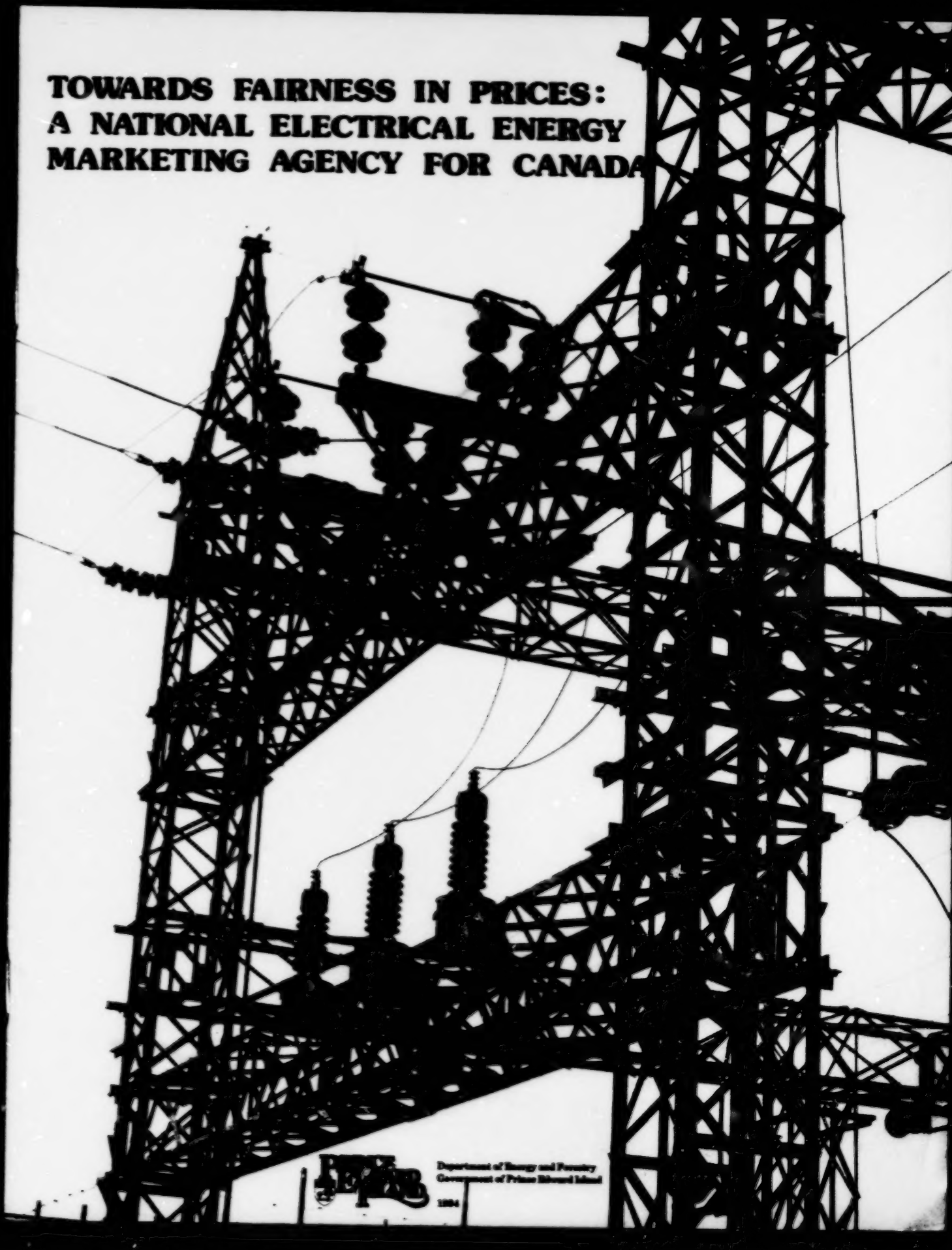
TOWARDS FAIRNESS IN PRICES: A NATIONAL ELECTRICAL ENERGY MARKETING AGENCY FOR CANADA



Department of Energy and Forestry
Government of Prince Edward Island
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Foreword

This policy document arose from a dilemma which is felt everywhere in Canada, but nowhere more keenly than in Prince Edward Island. At three times the national average, our electricity rates are higher than those in any other province. In attempting to come to gripe with the problem, it became apparent to us that in respect of electricity — this vital carrier of energy — Canadians do not behave with any sense of national purpose. Rather, the respective provincial utilities act in relation to one another in a manner little different from their international dealings. The present system by which electricity costs to the customsr are determined is deeply ingrained. I believe that the day will come when electricity will be more important to Canada than oil, and as that day nears the sheer perniciousness of that system will become overwhelmingly apparent. Canadians should have access to electricity on the same basis as they have access to home heating oil — at a blended price, nearly constant across the country.

The proposal advanced in this document is not the final answer. Rather, it answers the question, "what is achievable now?" While a National Electrical Energy Marketing Agency is feasible, in our view, it is only one step on the road to a national policy for electrical energy — one in which the principle of fairness to all Canadians in respect of energy prices will be carried to its logical conclusion.

Hon. Frederick L. Driscoll
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Executive Summary

1. Unlike the case for oil or natural gas, regional variations in the price of electricity are profound.

2. On constitutional and historical considerations, the reduction of regional disparities in the price of a commodity as essential as electricity should be a goal of all governments in Canada.

3. Disparities might be reduced if a National Electrical Energy Marketing Agency were created. This Agency would purchase all secondary (economy) energy sold between provinces in Canada, and resell the energy to purchasing utilities at a blended price.

4. If such an Agency had been in operation in 1983, significant benefits would have been realized in the Maritime Provinces, offset by very slight disbenefits in central and western Canada.

5. The concept of a National Electrical Energy Marketing Agency merits immediate detailed consideration by all parties that would be affected by its implementation.

Towards Fairness In Prices: A National Electrical Energy Marketing Agency For Canada

INTRODUCTION

Canadian energy systems are characterized by three major energy currencies, namely liquid hydrocarbons, natural gas and electricity. National energy policy in respect of oil and natural gas is that the price should be "blended" such that, no matter what the cost at source, the product is delivered to consumers at a price which reflects only differences in transportation costs before provincial taxes are added. In the case of electricity, our most versatile energy currency, no blending occurs, and provincial prices are determined by the cost of generation, transmission and distribution within the province, modified by whatever inter-utility arrangements can be made between adjacent provinces. The result of this situation is clearly indicated in Table 1, which shows that in 1983 the variation in the price of electricity between provinces was about three times more than that for natural gas, and about twenty-five times more than that for home heating oil.

With the passage of time, electricity will undoubtedly come to occupy a more important and central position in our energy mix. The need for some arrangement to reduce price disparities across this country will become imperative. Governments cannot sit idly by while the basic amenities that underlie the Canadian standard of living are priced out of the reach of some Canadians.

What is an "Energy Currency"?

An energy currency (or energy carrier) is distinct from an energy source and resembles a monetary currency in that it can be won from a variety of sources, stored to a greater or lesser extent, and "spent" in a variety of ways. Thus, liquid hydrocarbons may be won from conventional or heavy oil deposits, oil sands, or by conversion from coal, oil shales or biomass. After refining they may be stored until needed for use in transportation or heating applications.

TABLE 1: COMPARATIVE ENERGY PRICES IN CANADA FOR 1983
(comparative index in brackets, Average = 100)

	Home Heating Oil (¢/L)	Natural Gas (Res.) ($/10 cu.m)	Electricity (Res.) ($/750 kW.h/Mo.)	Electricity (Ind.) ($/400,000 kW.h/Mo.)
Nfld.	35.1 (104)	-	44.25 (112)	17,499.81 (099)
P.E.I.	33.7 (100)	-	84.68 (213)	41,171.07 (234)
N.S.	33.5 (100)	-	44.93 (113)	18,584.98 (106)
N.B.	33.5 (100)	-	41.28 (104)	16,912.05 (096)
Que.	33.5 (100)	2.44 (131)	29.10 (073)	15,169.50 (086)
Ont.	32.8 (098)	2.29 (123)	30.99 (078)	13,802.58 (078)
Man.	33.4 (099)	1.86 (100)	24.67 (062)	9,257.30 (053)
Sask.	32.5 (097)	1.45 (078)	29.19 (074)	15,027.04 (085)
Alta.	- -	1.36 (073)	34.27 (086)	15,736.94 (089)
B.C.	34.3 (102)	1.74 (094)	33.32 (084)	12,966.59 (074)
Comparative Index Range	7	58	151	181

Source: Energy Statistics Handbook, Energy, Mines and Resources Canada

There is one area in which interprovincial action could result in a significant reduction in regional disparities without a large expenditure of public money and without serious negative impact on any provincial utilities: the creation of a National Electrical Energy Marketing Agency. The function of this Agency would be to purchase all secondary energy sold between utilities interconnected at provincial boundaries. The purchases would be made at rates specified in existing agreements, such that the selling utility would realize the same income per kW.h of electricity sold as would otherwise have been the case. The Agency would "blend" the price of the energy it purchases and resell it to the purchasing utilities at the blended price.

Electricity rates in all provinces would be affected, at least in theory. If the scheme had been applied to actual sales in 1983, rates could have decreased in some provinces by as much as 17 per cent while increasing in others by less than one per cent.

HISTORICAL AND CONSTITUTIONAL PERSPECTIVE

Canada was founded as a federal state, to allow for provincial differences while emphasizing the need to equalize opportunities. The cooperative approach to giving the country its economic foundations began before confederation with the building of the colonial canal systems, and it continued during the railway building years that gave Canada its first great unifying economic tool, a transcontinental rail network.

The historical development of the Canadian regions was dependent upon fiscal cooperation as well. Early on, the provinces decided against interprovincial tariffs on the movement of goods.

Firm Power and Secondary Energy

Electricity sold between provinces may be loosely categorized as "firm" or "secondary". The delivery of firm power carries with it a commitment to make the electricity available as and when required. Firm power sales are commonly tied to the output of specific generating plants. Seconday energy is surplus to a utility's requirements after all internal and firm customers have been satisfied. Because it is subject to interruption at the discretion of the selling utility it is generally less expensive than firm power. Its price is determined by a formula which takes into account its cost of generation and the cost of displaced energy in the receiving system.

The intention was to permit the development of agriculture and industry in all regions of Canada. This same principle was carried further in the development of the equalization payments system by which it is intended that all regions be provided with a minimum level and quality of public services.

This national commitment was formally supported in Section 36 of the Canadian Charter of Rights and Freedoms (Constitution Act, 1982);

> 36. (1) Without altering the legislative authority of Parliament or of the provincial legislatures, or the rights of any of them with respect to the exercise of their legislative authority, Parliament and the legislatures, together with the government of Canada and the provincial governments, are committed to
>
> (a) promoting equal opportunities for the well-being of Canadians;
>
> (b) furthering economic development to reduce disparity in opportunities; and
>
> (c) providing essential public services of reasonable quality to all Canadians.
>
> (2) Parliament and the Government of Canada are committed to the principle of making equalization payments to ensure that provincial governments have sufficient revenues to provide reasonably comparable levels of public services at reasonably comparable levels of taxation.

A more specific commitment to the principle of mutual support is found in Section 92A of the Constitution Act, 1867 (added by the Constitution Act, 1982):

> 92A (2) In each province, the legislature may make laws in relation to the export from the province to another part of Canada of ... the production from facilities in the province for the generation of electrical energy, but such laws may not authorize or provide for discrimination in prices or in supplies exported to another part of Canada.

Electrical energy is now sold between provinces at prices that vary according to the destination. These prices are determined under interconnection agreements which do not have the force of laws made by the legislatures and are not, therefore, affected by Section 92A. Nevertheless, the philosophy behind this Section and the long-range intent of its signatories are clear. The effect of the present conventions under which electricity is traded between provinces is to frustrate that intent.

Finally, notwithstanding the exclusivity of powers assigned to the provincial governments, it must be remembered that the federal government has a permanent role to play in achieving the goals of nationhood, and in particular in reducing regional disparities. Section 91 of the Constitution Act, 1982, which relates to the legislative powers of Parliament to make laws for the peace, order and good government of Canada, gives the Parliament of Canada exclusive legislative authority in the regulation of trade and commerce.

A NATIONAL ELECTRICAL ENERGY MARKETING AGENCY

The concept of a National Electrical Energy Marketing Agency (NEEMA) was inspired in part by the Electric Energy Marketing Act which was passed by the Legislative Assembly of Alberta in 1981. The intent of the Alberta Act is that the Provincial Agency reduce rate differences among consumer groups in that province by equalizing power rates at the wholesale level before distribution. The Agency does this by purchasing electricity produced by a utility at its cost, and then immediately reselling the same power back at a price that is uniform throughout the province.

In the case of NEEMA, complete equalization of rates would not be possible, because the National Agency could only operate in respect of interprovincial sales, and would only purchase secondary energy for resale. NEEMA could go so far as to play the role of an interprovincial dispatch agency, maintaining an ongoing awareness of the generating systems involved in secondary energy purchases and sales. The elements of NEEMA's operation would be as follows:

1. Utilities would offer surplus energy to interconnected utilities in adjacent provinces on the same basis as is now the case — that is, using the split-increment or other formula as specified in whatever agreements may apply.

2. Energy accepted by the receiving utility would be bought and paid for, not by the receiving utility, but by NEEMA.

3. NEEMA would average the price of energy it purchased per unit time on a suitable basis, and sell the energy to the receiving utilities at that average price. The total selling price per unit time would equal the total purchase price for the same unit time.

4. International power sales would not be affected.

5. Internal operation of the utilities would not be affected. Regulation of the utilities, where applicable, would not be affected.

The unit time period over which weighted average prices would be calculated would depend upon the nature of existing interconnection agreements and might involve some compromises, but would most likely be hourly. NEEMA's activities would be defined and constrained by provincial agreement or federal legislation and it would be directed by a Board consisting of representatives appointed from all governments involved. The cost of operating NEEMA would most probably be borne by the Government of Canada.

IMPACT OF THE PLAN

In a retrospective sense, the impact of the plan can be assessed by examining what would have been its impact on rates in a "snapshot" year of actual sales. This can be done for 1983, and the results are depicted in Table 2. The advantage or disadvantage to each province under the plan is expressed as a percentage of internal sales, which would translate into rate increases or decreases under ideal circumstances.

Briefly, the Maritime provinces would benefit from the scheme, Quebec would break even, and the provinces west of Quebec would suffer disbenefits. The benefits and disbenefits would not be felt equally by all participants, however. In 1983 Prince Edward Island would have seen rate decreases over 17 per cent and New Brunswick would have benefitted by about 5 per cent. Ontario and the western provinces would have seen rate increases (theoretically) of less than one per cent. It is noteworthy that these disbenefits are far outweighed by the comparative advantage in rates now enjoyed by those same provinces. The province that would stand to gain the most, Prince Edward Island, is the province that now has by far the highest electricity rates in Canada.

TABLE 2: IMPORTS AND PRICES OF SECONDARY ENERGY BY PROVINCE FOR 1983[1], AND IMPACTS WITH A NATIONAL ELECTRICAL ENERGY MARGETING AGENCY (NEEMA) IN PLACE

Purchasing Province	MW.h (Rate, ¢/kW.h)	Weighted Avg. (Rate, ¢/kW.h)	Benefit (Disbenefit) Under NEEMA: Purchase Rate	% of Internal Sales[2]	
N.B. (from N.S.)	56,850 (7.15)	2.41	4.74	0.77	} 5.03
N.B. (from Que.)	3,966,107 (2.79)	2.41	0.38	4.26	}
N.S. (from N.B.)	672,183 (3.24)	2.41	0.83	1.54	
P.E.I. (from N.B.)	378,909 (5.08)	2.41	2.67	17.56	
Ont. (from Que.)	1,689,494 (1.41)	2.41	(1.00)	(0.48)	} (0.76)
Ont. (from Man.)	760,888 (1.12)	2.41	(1.29)	(0.28)	}
Man. (from Sask.)	100,314 (0.78)	2.41	(1.63)	(0.51)	
Sask. (from Man.)	295,808 (1.53)	2.41	(0.88)	(0.70)	
Alta. (from B.C.)	130,137 (1.08)	2.41	(1.33)	(0.17)	
B.C. (from Alta.)	43,059 (0.16)	2.41	(2.25)	(0.09)	

Notes: (1) Preliminary Estimates.

(2) Per cent of internal sales approximates the rate change to customers that would be experienced if the benefit/disbenefit were passed on to all customers in the system. Where a province purchases from two other provinces, the benefits/disbenefits are additive, as shown by brace brackets.

Table 2 considers only secondary energy. There are many degrees of "firmness" in electrical energy sales, however, and it might prove appropriate that somewhat more or less energy be transacted under NEEMA than is shown in Table 2. For information purposes, the reader is referred to Table 2A and 2B in the Appendix. These tables portray the effect of involving NEEMA in both firm and secondary transactions — 2A including Newfoundland and 2B excluding Newfoundland. In both cases the impacts of NEEMA are magnified, although with Newfoundland included the disbenefits are skewed towards Quebec.

The other major concern to be addressed is the effect of the plan on future secondary energy sales. Those provinces benefitting from the plan will be encouraged to maximize their purchases of secondary energy, and this will be to the advantage of the selling provinces. Thus, Quebec and New Brunswick may be encouraged to look for expanded markets further east. In Ontario and the western provinces, the relatively small impact of the scheme might not greatly change the pattern of energy transfers. Rigorous analysis will be necessary to determine, in detail, the probable impact of the plan on the supply and demand of secondary energy in Canada.

Over the long term, the plan should have no significant impact on capacity additions in provinces which are net purchasers of electricity. Utlities will continue to find it necessary to be able to meet their own capacity requirements including reserve, and it will remain advantageous from every aspect to ensure that those additions are the lowest cost alternatives available. The impact of the presence of NEEMA on negotiations or re-negotiations of interconnection agreements needs to be carefully assessed on a province-by-province basis.

Appendix

TABLE 2A: IMPORTS AND PRICES OF FIRM AND SECONDARY POWER BY PROVINCE FOR 1983[1], AND IMPACTS WITH A NATIONAL ELECTRICAL ENERGY MARKETING AGENCY (NEEMA) IN PLACE.

Purchasing Province	MW.h (Rate, ¢/kW.h)	Weighted Avg. (Rate, ¢/kW.h)	Benefit (Disbenefit) Under NEEMA: Purchase Rate	% of Internal Sales[2]	
N.B. (from N.S.)	56,850 (7.15)	0.80	6.35	1.04	} 23.91
N.B. (from Que.)	3,966,186 (2.79)	0.80	1.99	22.87	
N.S. (from N.B.)	672,183 (3.24)	0.80	2.44	4.53	
P.E.I (from. N.B.)	390,451 (5.23)	0.80	4.43	30.03	
Que. (from Nfld.)	31,228,753 (0.29)	0.80	(0.51)	(5.16)	
Ont. (from Que.)	5,373,508 (1.45)	0.80	0.65	1.00	} 1.15
Ont. (from Man.)	937,528 (1.37)	0.80	0.57	0.15	
Man. (from Sask.)	100,314 (0.78)	0.80	(0.02)	(0.01)	
Sask. (from Man.)	391,083 (1.52)	0.80	0.72	0.76	
Alta. (from Sask.)	3,069 (4.37)	0.80	3.57	0.01	} 0.06
Alta. (from B.C.)	134,943 (1.16)	0.80	0.36	0.05	
B.C. (from Alta.)	43,358 (0.19)	0.80	(0.61)	(0.02)	

Notes: (1) Preliminary Estimates.

(2) Per cent of internal sales approximates the rate change to customers that would be experienced if the benefit/disbenefit were passed on to all customers in the system. Where a province purchases from two other provinces, the benefits/disbenefits are additive, as shown by brace brackets.

TABLE 2B: IMPORTS AND PRICES OF FIRM AND SECONDARY POWER BY PROVINCE FOR 1983, [1] AND IMPACTS WITH A NATIONAL ELECTRICAL ENERGY MARKETING AGENCY (NEEMA) IN PLACE, NEWFOUNDLAND EXCLUDED

Purchasing Province	MW.h (Rate, ¢/kW.h)	Weighted Avg. (Rate, ¢/kW.h)	Benefit (Disbenefit) Under NEEMA: Purchase Rate	% of Internal Sales[2]	
N.B. (from N.S.)	56,850 (7.15)	2.12	5.03	0.82	} 8.46
N.B. (from Que.)	3,966,186 (2.79)	2.12	0.67	7.64	
N.S. (from N.B.)	672,183 (3.24)	2.12	1.12	2.08	
P.E.I (from N.B.)	390,451 (5.23)	2.12	3.11	21.08	
Ont. (from Que.)	5,373,508 (1.45)	2.12	(0.67)	(1.03)	} (1.23)
Ont. (from Man.)	937,528 (1.37)	2.12	(0.75)	(0.20)	
Man. (from Sask.)	100,314 (0.78)	2.12	(1.34)	(0.42)	
Sask. (from Man.)	391,083 (1.52)	2.12	(0.60)	(0.63)	
Alta. (from Sask.)	3,069 (4.37)	2.12	2.25	0.01	} (0.12)
Alta. (from B.C.)	134,943 (1.16)	2.12	(0.96)	(0.13)	
B.C. (from Alta.)	43,358 (0.19)	2.12	(1.93)	(0.08)	

Notes: (1) Preliminary Estimates.

(2) Per cent of internal sales approximates the rate change to customers that would be experienced if the benefit/disbenefit were passed on to all customers in the system. Where a province purchases from two other provinces, the benefits/disbenefits are additive, as shown by brace brackets.

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